

Abstract

An improved nozzle and iodine injector system for use in a COIL are disclosed. The improved nozzle is a two-dimensional, minimum length nozzle with a curved sonic line. The iodine injection system utilizes a series of slender struts for iodine injection into the oxygen stream through a series of small orifices that are located along the base of each strut. The struts are located within the nozzle such that the need for a diluent gas for the iodine is reduced. The use of the nozzle and iodine injection system, particularly when combined with the SOG disclosed in U.S. Patent Application Serial No. 10/453,148, have the potential for yielding a highly efficient, high power, optically superior COIL device that is compact, scalable, can operate in space, and has good pressure recovery potential.

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